5-4: Sample processing

Verification of quality

Once a sample enters the laboratory, there are a number of steps needed prior to testing.

- Verify the sample is properly labelled, adequate in quantity, in good condition and appropriate for the test requested. The test request must be complete and include all necessary information.
- Record sample information into a register or log.
- Enforce procedures for handling suboptimum samples, including sample rejection when necessary.

Rejection of samples

The laboratory should establish rejection criteria and follow them closely. It is sometimes difficult to reject a sample, but remember that a poor sample will not allow for accurate results. It is the responsibility of the laboratory to enforce its policies on sample rejection so that patient care is not compromised.

Management should regularly review the number of rejected samples and reasons for rejections, conduct training on sample collection, and revise written procedures for sample management as needed.

The following are examples of samples that should be rejected:

- unlabelled sample;
- broken or leaking tube/container;
- insufficient patient information;
- sample label and patient name on the test request form do not match;
- haemolysed sample (depending on test requested);
- nonfasting samples, for tests that require fasting;
- sample collected in wrong tube/container (e.g. using the wrong preservative or a nonsterile container);
- inadequate volume for the quantity of preservative;
- insufficient quantity for the test requested;
- prolonged transport time or other poor handling during transport.

Record the reason for rejection in the logbook and include all pertinent information.

When rejecting a sample, it is important to:

- promptly inform the authorized person that the sample is unsuitable for testing;
- request another sample to be collected following procedures outlined in the laboratory handbook;
- retain the rejected sample pending a final decision regarding disposition.

In some circumstances, and after consultation with the requester, it may be necessary to proceed with the testing of a sample that is not optimal.

Register or log

The laboratory should keep a register (log) of all incoming samples. A master register may be kept, or each specialty laboratory may keep its own sample register.

Assign the sample a laboratory identification number—write the number on the sample and the requisition form. If computers are used for reports, enter the information into the computer.

The register should include:
- date and time of collection
- date and time the sample was received in the laboratory
- sample type
- patient name and demographics, as required
- laboratory assigned identification (e.g. number 276_01_06_2009)
- tests to be performed.

Tracking system

The laboratory needs a system to allow for tracking a sample throughout the laboratory from the time it is received until results are reported.
This can be done manually by careful keeping of records as follows.
- Confirm receipt of samples and include date and time.
- Label samples appropriately and keep with the test requisition until laboratory identification is assigned.
- Track aliquots—they should be traceable to the original sample.

If computers are available, maintain a database for tracking. The following information about each sample should be entered into the database:
- identification number
- patient information
- collection date and time
- type of sample (e.g. urine, throat, cerebrospinal fluid for culture)
- tests to be performed
- name of ordering physician (or other health care provider)
- location of patient (e.g. ward, clinic, outpatient)
- diagnostic test results
- time and date results are reported.

Sample handling

Handle all samples as if they are infectious.